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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/978,637	11/25/1997	ELAZAR RABBANI	ENZ-53(DIV5)	4643

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EXAMINER	
ZARA, JANE J	

ART UNIT	PAPER NUMBER
1635	

MAIL DATE	DELIVERY MODE
07/22/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	08/978,637	RABBANI ET AL.	
	Examiner	Art Unit	
	Jane Zara	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) *318-323* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *See Continuation Sheet* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5-9-10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 245,248-251,253-255,260,264,265,268,270,272,284,290,296,299,303,304,308,312,313,318-323,325 and 326.

Continuation of Disposition of Claims: Claims rejected are 245,248-251,253-255,260,264,265,268,270,272,284,290,296,299,303,304,308,312,313,325 and 326.

DETAILED ACTION

This Office action is in response to the communication filed 5-5-10.

Claims 245, 248-251, 253-255, 260, 264, 265, 268, 270, 272, 284, 290, 296, 299, 303, 304, 308, 312, 313, 318-323, 325, and 326 are pending in the instant application.

Claims 318-323 have been withdrawn as being drawn to non-elected inventions.

Claims 245, 248-251, 253-255, 260, 264, 265, 268, 270, 272, 284, 290, 296, 299, 303, 304, 308, 312, 313, 325 and 326 have been examined on their merits as set forth below.

Response to Arguments and Amendments

Withdrawn Rejections

Any rejections not repeated in this Office action are hereby withdrawn.

Maintained Rejections

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 245, 248-251, 253-255, 260, 264, 265, 268, 272, 284, 290, 296 are rejected under 35 U.S.C. 102(b) as being anticipated by Izant (Chimeric Antisense RNAs, in Gene Regulation: Biology of Antisense RNA and DNA, pages 183-195 (Erickson, R.P and Izant, J.G., eds.; Raven Press, Ltd: New York) (1992) for the reasons of record set forth in the Office action mailed 11-5-09.

Izant (Chimeric Antisense RNAs, in Gene Regulation: Biology of Antisense RNA and DNA, pages 183-195 (Erickson, R.P and Izant, J.G., eds.; Raven Press, Ltd: New York) (1992) teaches nucleic acid compositions and cells, and a process for localizing a gene product in a eukaryotic cell ex vivo or in a culture, comprising providing an isolated primary nucleic acid construct comprising a primary nucleic acid which is a template for the synthesis of a secondary nucleic acid, which is a template for the synthesis of a gene product, which is an antisense nuclei acid and does not act as a template for the synthesis of the primary nucleic acid and further comprises a signal processing sequence which is optionally an snRNA U2 promoter comprising sequences for at least two stem loops present at the 3' end of the native snRNA, a nuclear re-importation signal, and which comprises a nucleic acid encoding an antisense nucleic acid sequence replacing stem-loop sequences in the native U2 snRNA (see entire document, esp. pages 183-184; 186-190).

Applicant's arguments filed 5-9-10 have been fully considered but they are not persuasive. Applicant argues that Izant does not properly anticipate the instantly claimed invention because no teaching or suggestion exists in Izanti for how a tertiary nucleic acid is made from a secondary nucleic acid. Applicant also argues that Izanti

does not teach replacement of U2 sequences involved in stem-loop sequences, but instead teaches the insertion of an Xho restriction enzyme site for insertions into the U2 sequence, with no loss of the native snRNA sequences.

Contrary to Applicant's assertions, it is quite clear from the teachings of Izanti that one of skill would know how an antisense (i.e., a tertiary nucleic acid) is generated from a restriction site on a secondary nucleic acid construct (i.e., a recombinantly expressed nucleic acid construct comprising a restriction site for excision of the antisense portion by a restriction enzyme). In addition, the replacement of the stem-loop sequences, once contiguous in native U2snRNA, with an inserted restriction site for insertion of antisense sequences does not necessarily mean removal of the native sequences, but can also include insertions of extraneous sequences, which are undoubtedly taught by Izant. The instant claims are so broad that they encompass the constructs taught by Izant. The claims do not explicitly recite particular nucleic acid sequences, nor do they explicitly state removal of the native sequences, and so displacement of the original sequences of the native U2 snRNA by intervening sequences would be reasonably encompassed by the broad genus claimed.

Claims 245, 248-251, 253-255, 264, 272, 284 are rejected under 35 U.S.C. 102(e) as being anticipated by Meador et al (USPN 5,547,862) for the reasons of record set forth in the Office action mailed 11-5-09.

Meador et al (USPN 5,547,862) teach cells and in vitro cultures comprising nucleic acid compositions comprising an isolated primary nucleic acid construct

comprising a primary nucleic acid which is a template for the synthesis of a secondary nucleic acid which is a template for the synthesis of a gene product, and further comprises a signal processing sequence (See esp. the abstract, col. 1-3, 11, col. 15-17, claims 1-25).

Applicant's arguments filed 5-9-10 have been fully considered but they are not persuasive. Applicant argues that Meador does not teach secondary nucleic acid products, obtained from expression of the multiple promoter constructs, could synthesize any tertiary gene products which are nucleic acids.

Contrary to Applicant's assertions, Meador does indeed contemplate the synthesis of tertiary nucleic acids using multiple promoters and inserting restriction sites. These tertiary constructs are proposed to serve at least one of a myriad of functions, including the synthesis of antisense constructs (e.g. for target gene inhibition), the synthesis of shuttle vectors to move between prokaryotes and eukaryotes, nucleic acids to integrate into the genome of a target cell, and/or for extrachromosomal integration, see, e.g. paragraphs 44 and 45 of Meador for such a list:

> As to the particular vectors themselves, a variety of plasmid vectors with multiple, uni-directional promoters may be constructed in light of the novel concepts enabled by the present inventors. The vector may be generally designed to function in any molecular biological application, and the construction of the remaining portion of the vector is not critical to the functioning of the transcription region under the control of the multiple promoters. Vectors which may be used in conjunction with the present invention include a variety of plasmids which contain genes facilitating selection, for example, genes contributing antibiotic resistance; bacteriophage vectors such as lambda or related phages; shuttle vectors designed to be propagated both in prokaryotes and eukaryotes, such as E. coli /yeast vectors; vectors which produce fusion proteins or which fuse the cloned DNA with regions of the vector which control expression; vectors capable of transforming mammalian cells and which might either

integrate into the genome or be maintained or replicated extrachromosomally; and viral vectors for use with mammalian cells.

The recombinant DNA insert used in connection with the vectors of the invention may be of virtually any type. The DNA employed will, of course, be dependent on the intended function of the RNA produced by the in vitro synthetic reaction. As in vitro transcription is used to synthesize RNA probes, e.g. for use in Northern and Southern blotting, in situ hybridization and ribonuclease protection assays, the DNA insert may be any coding or non-coding DNA to which one wishes to generate a probe for use in screening, further cloning, manipulation or other analyses. In vitro transcription is also used to synthesize synthetic mRNAs for use, e.g., in in vitro translation, microinjection and antisense technology. In these embodiments, the DNA inserts may encode entire genes; functional protein domains; polypeptides and peptides; antigenic fragments; or may encode the complement (antisense version) of any such sequence.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 245, 248-251, 253-255, 260, 264, 265, 268, 272, 284, 288-290, 296, 299, 303, 304, 308-313, 324-326 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meador et al (USPN 5,547,862) and Izant (Chimeric Antisense RNAs, in Gene Regulation: Biology of Antisense RNA and DNA, pages 183-195 (Erickson, R.P and Izant, J.G., eds.; Raven Press, Ltd: New York) (1992), the combination in view of Calabretta et al. (USPN 5,734,039) and Binkley et al (Nucleic Acids Research, 1995, Vol. 23, No. 16, pages 3198-3205), the combination further in view of Craig et al (WO

95/08635) and Alul et al (USPN 5,532,130) for the reasons of record set forth in the Office action mailed 11-5-09.

The claims are drawn to nucleic acid compositions and cells, and a process for localizing a gene product in a eukaryotic cell ex vivo or in a culture, comprising providing an isolated primary nucleic acid construct which comprises at least one primary nucleic acid which is a template for the synthesis of a secondary nucleic acid which is a template for the synthesis of a gene product which is optionally an antisense nuclei acid, and does not act as a template for the synthesis of the primary nucleic acid, and further comprises a signal processing sequence which is optionally a bacteriophage promoter or an snRNA U2 promoter cassette comprising sequences of at least two stem loops present at the 3' end of the native snRNA, a nuclear re-importation signal, and which comprises an antisense nucleic acid sequence replacing stem-loop sequences in the native U2 snRNA, and which nucleic acid construct is optionally an isolated multi-cassette nucleic acid construct comprising three promoters, which upon insertion into a eukaryotic cell produces more than one specific nucleic acid, each such specific nucleic acid so produced being substantially non-homologous with each other and being either complementary with a specific portion of one or more viral or cellular RNAs in a cell, or binds to a specific viral or cellular protein, wherein each specific nucleic acid binds to different target nucleic acid sequences, wherein the specific nucleic acids bind to a specific cellular protein comprising a localizing protein or a decoy protein, which virus is optionally HIV.

Meador et al (USPN 5,547,862) teach cells and in vitro cultures comprising nucleic acid compositions comprising multi-cassette nucleic acid constructs comprising three promoters, each cassette comprising a promoter, which is optionally a bacteriophage promoter, and which individual cassette each comprises an isolated primary nucleic acid construct comprising a primary nucleic acid which is a template for the synthesis of a secondary nucleic acid, which is a template for the synthesis of a gene product, and further comprises a signal processing sequence (See esp. the abstract, col. 1-3, 11, col. 15-17, claims 1-25).

Izant (Chimeric Antisense RNAs, in Gene Regulation: Biology of Antisense RNA and DNA, pages 183-195 (Erickson, R.P and Izant, J.G., eds.; Raven Press, Ltd: New York) (1992) teaches nucleic acid compositions and cells, and a process for localizing a gene product in a eukaryotic cell ex vivo or in a culture, comprising providing an isolated primary nucleic acid construct comprising a primary nucleic acid which is a template for the synthesis of a secondary nucleic acid, which is a template for the synthesis of a gene product, which is an antisense nuclei acid that specifically targets and inhibits the expression of a known target gene, and does not act as a template for the synthesis of the primary nucleic acid and further comprises a signal processing sequence which is optionally an snRNA U2 promoter comprising sequences for at least two stem loops present at the 3' end of the native snRNA, a nuclear re-importation signal, and which comprises a nucleic acid encoding an antisense nucleic acid sequence replacing stem-loop sequences in the native U2 snRNA (see entire document, esp. pages 183-184; 186-190).

The primary references do not teach the expression of antisense specific for targets in two different subcellular locations, nor do they teach nucleic acids that bind to or target nucleic acids encoding HIV cellular proteins, nor nucleic acids that bind to decoy proteins.

Calabretta et al teach a composition for introducing two different antisense oligonucleotides specific for two different genes to a cell. Calabretta teaches a nucleic acid construct targeting a cytoplasmic oncogene or proto-oncogene DNA, and a second segment targeting a nuclear oncogene or proto-oncogene. The DNA containing segments are in inverted orientation such that transcription of the DNA produces RNA complementary to the two mRNA transcripts of the two oncogene targets (see columns 8 and 9, for example). Calabretta teaches various modifications of the nucleic acids and means of delivery of the compositions.

Binkley et al teach high affinity RNA ligands to human nerve growth factor (NGF), which is a protein that is essential for growth, differentiation and maintenance of neurons and has the ability to localize or attract NGF-sensitive growing axons. Binkley teaches that the SELEX procedure is a widely used technique for isolating, identifying, and characterizing RNAs with high specificity and affinity to proteins, which target proteins may be optionally located in the nucleus or the cytoplasm. Binkley teaches that specific RNA ligands to proteins can be routinely generated and isolated using SELEX.

Craig et al teach the expression of viral decoy proteins under the control of a locus control region and teach that decoy proteins act as antagonists to natural proteins involved in the replication of the HIV virus. Craig teaches that a decoy protein can be

used as a mutant of a transactivator protein that is capable of binding to the transactivator-responsive site on the host or viral genome, yet is incapable of activating transcription (see pages 2 and 3, for example).

Alul et al teach the routine experimentation and design of antisense or ribozymes to target HIV RNA encoding proteins (see esp. the second paragraph of the section entitled "Background of the Invention").

It would have been obvious to design a multi-cassette nucleic acid construct comprising the U2 snRNP promoter construct taught previously by Izant, and relying on the teachings of multiple promoter constructs taught previously by Meador because the elements required for producing (secondary) recombinant nucleic acids, including antisense and sense nucleic acids, using either the U2 or bacteriophage promoters were well known in the art. One would have been motivated to design and utilize such nucleic acid constructs because they provide the flexibility of expressing multiple nucleic acids encoded by operably linked primary nucleic acids, including elements that allow for localization in different subcellular compartments, depending on where the target gene is located. One would have reasonably expected that the inclusion of nuclear localizing or cytoplasmic localizing signals in the particular cassette would allow for the expression of the operably linked nucleic acid in the corresponding subcellular component. One would have been motivated to express such varied constructs in order to target and inhibit the expression of target genes in different cellular subcomponents with antisense, upon the expression of a particular antisense via a corresponding particular cassette encoding a particular, corresponding localization signal.

It would have been obvious to incorporate operably linked RNA oligonucleotides that bind to proteins, as taught by Binkley, or antisense oligonucleotides taught in the system of Calabretta et al or Izant. One would have been motivated to incorporate RNA oligonucleotides that bind to proteins instead of the antisense oligonucleotides in the multicomponent system taught previously by Meador because Binkley teaches that high affinity RNA ligands can be produced that specifically bind to proteins, and can be easily generated and isolated using the SELEX procedure.

One would have a reasonable expectation of success given that each of the nucleic acid molecules were known to bind with target molecules in a sequence specific manner, as evidenced by the teachings of Calabretta, Izant, and Binkley. One would have a reasonable expectation of success to express the protein binding RNA molecules of Binkley or the dual targeting system of Calabretta in the multi-cassette system of Meador, or alternatively swapping the multi-cassette promoters of Meador with the U2 promoter taught previously by Izant, with the advantage of producing two, three or more different inhibitory or binding molecules at once, and optionally in different parts of the cell, depending on the location of the corresponding target gene.

It also would have been obvious to use the SELEX method to assay for RNA molecules that bind to a protein, as taught by Binkley and to specifically use a decoy protein as the protein, as taught by Craig. One of ordinary skill would have been motivated to design and synthesize antisense that target and inhibit the expression of HIV proteins to search for potential therapeutics to inhibit HIV infections, as taught previously by many in the art, including Alul et al. One would have been motivated to

screen for resultant RNA aptamers against a decoy protein because Binkley teaches that high affinity RNA ligands to proteins can be easily isolated using the SELEX procedure and teach that such RNAs may furnish useful diagnostic tools for the study of proteins, or to regulate the actions of decoy proteins in a cell. Since teach that decoy proteins are proteins that are useful to serve as mutants capable of binding to a preferred site but yet incapable of activating transcription, one would have been motivated to use the SELEX method of Binkley. to identify RNA ligands to any known protein, such as the decoy proteins of Craig, or to screen for RNA ligands that localize and inactivate the decoy proteins in a cell.

One would have a reasonable expectation of success given that Izant and Calabretta teach the ability of antisense to bind and inhibit the expression of a target gene, Craig teaches the benefits of decoy proteins, and Binkley teach assaying for RNA aptamers using routine experimentation, and teach a method (SELEX) that is widely use to identify RNA molecules that bind to known proteins.

Thus, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Applicant's arguments filed 5-9-10 have been fully considered but they are not persuasive. Applicant argues that the instant rejection is improper because of the deficiencies of the primary references relied upon, Izant and Meador. Contrary to Applicant's assertions, Izant and Meador are properly relied upon for the reasons set forth above in addressing the argument for anticipation. Applicant additionally argues that the secondary references do not compensate for the alleged deficiencies of Izant

and Meador.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

For the reasons stated above, the instant rejection, relying upon the teachings of Meador, Izant, Calabretta, Binkley, Craig and Alul is hereby maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 245, 248-251, 253-255, 260, 264, 265, 268, 270, 272, 284, 290, 296, 299, 303, 304, 308, 312, 313, 325 and 326 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the reasons of record set forth in the Office action mailed 11-5-09.

The claims are drawn to an isolated multi-cassette nucleic acid construct comprising at least three promoters, and which optionally comprises a nuclear localization sequence comprising a portion of snRNA comprising sequences for at least

two stem loops present at the 3' end of native snRNA, a re-importation, and an antisense nucleic acid sequence replacing stem-loop formation of native snRNA, and which nucleic acid construct produces, upon introduction into any eukaryotic cell, at least one specific nucleic acid from each promoter or initiator, which upon insertion into a eukaryotic cell produces more than one specific nucleic acid, each such specific nucleic acid so produced being substantially non-homologous with each other and being either complementary with a specific portion of one or more viral or cellular RNAs in a cell or binds to a specific viral or cellular protein, which virus is optionally HIV, wherein each specific nucleic acid binds to a different target nucleic acid sequence, and the specific nucleic acid binds to a specific cellular protein comprising a localizing protein or a decoy protein.

The specification and claims do not adequately describe the various genera comprising i.) any snRNA comprising sequences for stem loops present at the 3' end of any native snRNA, and which comprise any re-importation signal or which comprise any antisense replacing sequences that participated in stem-loop formation in the native form of any snRNA; ii.) any cellular protein comprising any nuclear localizing protein or cytoplasmic localizing protein; iii.) any decoy protein binding to any protein required for viral assembly or viral replication.

Applicant's arguments filed 5-5-10 have been fully considered but they are not persuasive. Applicant argues that adequate written description has been provided for the broad genera claimed for several reasons. Applicant point out various portions of the specification that provide support, including definitions of terms used in the claims

and particular examples of reduction to practice. Applicant also points out that claim 265 has been amended to recite that the snRNA is U1, U2 or U4 snRNA and there would be a minimal amount of effort to apply the present methods exemplified using U1 to all of the U2 species claimed, as well as to the broader genus comprising snRNA. Applicant also argues that consensus secondary structures were reported for U1, U2, U4, U5 and U6, providing sufficient guidance for scaffold structures using all of these species .

Contrary to Applicant's assertions, the instant disclosure, at the time of filing, does not provide enough description of an adequate number of species for the broad genera claimed, and purported secondary structure consensus does not ensure the generation of functioning expression cassettes for all of the species claimed. The example provided in the instant disclosure does not fill the gap of information needed about what deletions would be tolerated in the snRNA structures and still allow for retaining the features of promoter function and nuclear re-importation activities. Applicant was therefore not in possession of this information at the time of filing the instant disclosure, and the art does not supplement this deficiency. The specification teaches the human U1 operon, and elimination of 49 base sequences involved in the formation of A and B loops formed by U1. Adequate written description has been provided for the species described by the particular construct described in example 26, exemplified in Figure 41, and provided in the sequence of Figure 42. The specification also teaches three segment, triple operon constructs comprising either three U1

promoters or three T7 promoters, and antisense targeting HIV 5' common leader, the TAT/REV coding sequence and the splice acceptor site for TAT/REV of HIV.

The disclosure of these constructs, however, is insufficient to teach or adequately describe a representative number of species for the broad genera of nucleic acid constructs claimed, such that the common attributes or characteristics concisely identifying members of each proposed genus are exemplified, and further whereby any primary nucleic acid construct comprising any primary nucleic acid sequence is introduced into any eukaryotic cells and acts as a template for the synthesis of any secondary nucleic acid for the synthesis of any gene product, which nucleic acid construct comprises any snRNA comprising sequences for stem loops present at the 3' end of any native snRNA, and which comprise any re-importation signal or which comprise any antisense replacing sequences that participated in stem-loop formation in the native form of any snRNA; ii.) any cellular protein comprising any nuclear localizing protein or cytoplasmic localizing protein; iii.) any decoy protein binding to any protein required for viral assembly or viral replication. The general knowledge and level of skill in the art at the time of filing do not supplement the omitted description because specific, not general, guidance is what is needed to provide a representative number of species for the broad array of nucleic acid constructs claimed.

The specific examples of "production centers" described by Applicant, however, are so generic that their specific utility is questionable: On page 93, for instance, the specification discloses production centers to include any nucleic acid capable of amplification, and describes any primary nucleic acid component as one that is capable

of producing a nucleic acid product, or a tertiary nucleic acid component, or both, but incapable of producing the primary nucleic acid component. The terms "production center" and "primary nucleic acid" are so broad that no concise structures can possibly be used to determine what is encompassed by the genera, or what is excluded. The specification therefore provides little, if any guidance as to the concise characteristics of the genus or genera which define the claimed genera, or precisely encompass the apparently infinite myriad of structures claimed.

Since the disclosure and the prior art, at the time of filing, fail to describe the common attributes or characteristics concisely identifying members of the proposed genera of compounds claimed, or fail to provide and adequate number of species for the broad genera claimed, the description provided for this very broad genera of compounds is insufficient. One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the very broad genera claimed.

Thus, applicant was not possession of the claimed expansive genera.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Certain papers related to this application may be submitted to Art Unit 1635 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. ' 1.6(d)). The official fax telephone number for the Group is **571-273-8300**. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jane Zara** whose telephone number is **(571) 272-0765.** The examiner's office hours are generally Monday-Friday, 10:30am - 7pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Low, can be reached on (571) 272-0951. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jane Zara
7-19-10

/Jane Zara/

Primary Examiner, Art Unit 1635